



April 2, 2007

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Ms. Ann Uhrich, Senior Project Manager

Seattle District Regulatory Section

Army Corps of Engineers

P.O. Box 3755

Seattle, WA 98124- 2255

RE: 200600052: Response to Comments on the Public Notice

Dear Ms. Uhrich;

This letter forms the City of Seattle Park and Recreation Department's response to the public comments received on the Public Notice for the proposed Phase 2 project at Warren G. Magnuson Park. As forwarded by you, the City received 129 comment letters and emails dated prior to December 31, 2006, and an additional 29 comment letters/emails between January 1 and February 1, 2007.

As is typical for large complex projects, many of the comment letters/emails were somewhat repetitive in their voicing of issues and concerns. We have summarized the 23 key issues that were consistently mentioned in the majority of all correspondence on the project. Some issues that were raised we have not included in our summary (e.g., the projects effect on global warming) as being outside the range of issues to be addressed by the 404 process.

Four individual letters that entailed more detailed comments have been directly addressed with responses; these include the two letters prepared by professional consultants and one letter prepared by the attorney representing one community activist group, and one letter from a citizen group. Another 'detailed' letter from the Hawthorne Hills community organization is a synopsis of the first of the three detailed letters, therefore the issues have been addressed. The letter from Dr. Horner was replied to in detail in January, at the request of Ecology; I've included our January response letters as attachments to this letter. The four individual letter responses are presented after the summary Table.

Copies of all comment letters have not been included in this response, but certainly can be provided as electronic pdf files, if requested.

Please contact me if you have any questions about these responses, or wish to discuss any of these particular issues further.

Sincerely,

A handwritten signature in black ink, appearing to read "Dyanne Sheldon". The signature is fluid and cursive, with a long, sweeping horizontal line extending to the right.

Dyanne Sheldon, Manager

Natural Resources Section

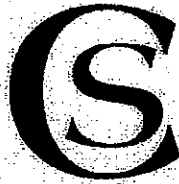
Comment Summary	Response
1. Request for extending the comment period beyond 30 days on the Public Notice to allow more time for review of complex documents	The Seattle District did not close the comment period on the project.
2. Request for Public Hearing so that oral comments can be given	The Seattle District made the determination to not hold a public hearing based on the comment received to date.
3. Filling wetlands for a non-water dependent use is contrary to the intent of Section 404 of the Clean Water Act	The Section 404(b)1 Guidelines require the consideration of the least environmentally impacting Alternative that will meet the purpose and need of a project. As described in the Alternative Analysis (April 6, 2007) for this project, the on-site Alternative, with clustered fields on the western fringe of the proposed habitat area, would result in the greatest ecological benefit of any of the considered Alternatives, even with inclusion of 6 acres of wetland impacts.
4. Fields are not centrally located in the City of Seattle.	The proposed project is in the northeast quadrant of the City; it is not located in the middle (central) location of the City. As described in the Alternative Analysis (April 6, 2007) surveys completed by Seattle Parks have shown the greatest demand for fields in this quarter of the City.
5. Access roads to the Park are residential not arterial	Based on the Final EIS, "Sand Point Way NE is classified as a minor arterial and has four lanes, two in each direction"... "South of NE 65th Street, Sand Point Way NE is designated as State Route 513." "...the study area intersections currently operate at Level Of Service (LOS) D or better during the PM peak hour. The LOS D conditions indicate that adequate capacity exists at the intersections...(Table 3.12-1, FEIS: Sand Point Magnuson Park: Drainage, Wetland/ Habitat Complex and Sports Fields/Courts Project)".
6. Proposed fields are for adults, not for children. Paying teams will use the fields, not making them available for families.	City of Seattle and the Seattle School District completed the Joint Athletic Field Program Development (JAFPD) in 2002 to identify field demand and use patterns. Magnuson Park was identified in this report as the location for multiple fields to meet field demand for youth and adult athletics. Parks manages fields on a reservation system that identifies key 'family use' times on weekends for informal use.
7. Fields should be dispersed through the City not concentrated in one location	The JAFPD identified the locations throughout the City on Parks and School District lands where field revisions could be implemented to increase field capacity to attempt to meet demand. Clustering fields at Magnuson was part of the design solution to meet demand; eliminating the Magnuson fields would not allow Parks to meet demand.

Comment Summary	Response
8. Necessary facilities (restrooms) are not present or proposed within the Park	Restrooms are present in the Park in various locations; mobile toilets will be required to meet demand in the Park.
9. Challenge for interested parties to understand technical documents and drawings	Detailed drawings and technical analysis is required to allow permit application reviewers to assure that accurate and appropriate design considerations have been included in the projects.
10. City of Seattle Parks and Recreation will not be responsive to permit conditions; will cause additional harm to resources in the Park as they did in Phase 1	Haul Road violations in Phase 1 were caused by contractors over-topping an existing haul-road in the Park, causing accidental side-casting of fill into adjacent wetlands. Restoration of the road shoulders was appropriately restored in the summer of 2005.
11. Inappropriate location for lit fields; lighting will adversely effect nearby residences, residents of Kirkland and wildlife habitat areas	The SEPA review process, including a lengthy public hearing, discussed the implications of lighting impacts to proposed on-site habitats, and humans in the near and far vicinity. The analysis within the DEIS and through the Hearing process was found to be adequate by the City Hearing Examiner. It was found that impacts from lighting to humans were not avoidable; impacts to wildlife could not be determined as neutral or negative based on the available science at the time of the Hearing.
12. Wetland mitigation is a documented to fail 50% of the time, therefore filling of existing functional wetland should not be permitted.	<p>Substantial advances in compensation design, review, and conditioning, as well as maintenance and monitoring standards have improved substantially since those “50% failure” studies were conducted. The wetland mitigation for the site is designed based on the most current scientific standards for compensation design, including:</p> <ul style="list-style-type: none"> • quantifiable performance standards, • proposed wetland parameters where the design is substantiated by quantified hydroperiod calculations for wetlands, • rigorous monitoring protocols from city, state, and federal agencies that will require annual maintenance, reporting, and adaptive management actions for 5 years at a minimum, and 10 years likely
13. The City failed to consider any other location for such a regional sports complex (arena).	As described in the DEIS (2002) and the 404(b)1 Guidelines Alternatives Analysis (2007), the City was never in a position to search around available Park lands for a location to place a “regional sports complex”. Over 30 years of public meetings and input have gone into the City Council approved Master Plan for Magnuson Park. The Master Plan included a use scenario for the Park that included multiple uses such as active recreation fields, walking paths, habitat, and educational opportunities.

Comment Summary	Response
14. Field #3 (subgrade for 5 th field) should not be placed in the wetland, but moved to the west, out of all wetland impacts.	Field #3, as described in the Alternative Analysis, is placed east of the existing Parade Ground Fields so that those grassed fields can continue to be used for scheduled games and not result in a decrease in capacity by losing any existing fields.
15. Natural wetlands on the site are functioning well and will be adversely impacted by project. Concern about the long-term impacts associated from the fields on the habitats.	All the current wetlands on the site have established since the Naval Air Station was decommissioned in the 1970's. As described in the Wetland Delineation Report (2005), the wetlands on the site are predominantly shallow wet pastures, seasonally flooded that resulted from minor topographic variations left on the compacted soils after demolition and removal of the former landing strips and taxiways. Design of the current layout for Phase 2 has attempted, to every extent feasible, to avoid adversely impacting existing groves and thickets of native trees and shrubs.
16. Inadequate funding identified in the Parks budget for long-term monitoring and maintenance.	It is anticipated that all permits associated with wetlands for the project will require 5 years of monitoring at a minimum and possibly 10.
17. Magnuson has one of the richest bird populations in the Seattle Area.	Seattle Audubon has been collecting bird data on the Park for many years and established an excellent record of the diversity of species present on the site. The DEIS noted that there will be a shift in habitat types on the site towards more wetland with greater duration of shallow impoundment and permanently impounded small ponds; as well as more structurally complex and diverse upland habitats over time. Thus it is expected that some species (e.g. Lincoln sparrow) that prefer the dry open grassland habitats will diminish, while other species (e.g. wading birds, waterfowl, and songbirds associated with upland thickets and forests) will likely increase over time.
18. Piecemeal applications for wetland fills over time avoids assessment of cumulative effects	The Corps of Engineers has the authority to determine if sequential applications for wetland permits should be considered cumulatively. At this time, they have not considered the minor after-the-fact permits required on the site sufficient to trigger a cumulative effects call.
19. There will be water quality impacts to wetlands, Lake Washington and Puget Sound from the field runoff. No baseline monitoring is proposed.	The Stormwater Technical Information Report (TIR) (2007), and associated letters of correspondence to Ecology in support of the Sect. 401 permit have clearly demonstrated to Ecology's satisfaction that water quality issues have been addressed to King County standards. Ecology has issued a Water Quality Certification permit in April, 2007 with a list of conditions to assure long-term protection and monitoring of water quality elements for the project. See also the responses to Dr. Horner's 2006 comment letter attached to this response memo.

Comment Summary	Response
20. Concern regarding viability of Pacific Chorus frog breeding due to changes in hydroperiod.	Pacific chorus frogs have successfully bred on this site for years in spite of a wide range of human actions. A change in hydroperiod to Frog Pond was the result of placement of silt fencing around the perimeter of the pond to attempt to protect it from silt from the adjacent haul road. Vandals sliced open the silt fence in several locations, compromising the function of the silt fence and allowing silt to enter the Pond. A temporary bypass culvert was placed at Frog Pond to allow water to leave the pond by flowing <i>under</i> the haul road, rather than flowing over the haul road as it had done for decades previously (carrying silt into down-gradient wetlands). The proposed flow-through emergent "rice paddies" in the future conditions are designed to mimic the seasonal inundation regime of Frog Pond with the intention of providing a substantial increase in amphibian and aquatic invertebrate habitat over existing conditions.
21. Concern of a Parks Department sewer system that was constructed in the 1970's through the Park: will it pollute the Lake?	The sanitary sewer system for the Naval Station Sand Point (now identified as the Warren G. Magnuson Park) ultimately ties into the regional Metro / King County sewer collection and treatment system. The Sand Point system consists of both gravity sewer lines (at higher elevations) and gravity and pressurized sewer lines (at distant lower elevations, including the shoreline). Park improvements in the 1970's included modifications and improvements to this system but maintained the sanitary sewer infrastructure that ultimately connected to the regional sanitary sewer system. No sanitary sewers on the site drain to Lake Washington. In addition, no sanitary sewer construction or expansion will occur as part of this project. The only sewers that will be modified as part of this project will be storm sewers that convey storm water runoff. The project will also provide water quality treatment for storm water that currently passes untreated into Lake Washington, resulting in a net improvement to storm water quality draining to Lake Washington.
22. The City is proposing to use volunteers to conduct monitoring and this is inappropriate. Water quality monitoring should be done by professionals.	Parks obtained a King County grant to assist in day-lighting the stormdrain through the entrance marsh complex in the proposed conditions. King County requested the inclusion of authentic hands-on volunteer restoration opportunities within the Park. There is a long and important history of volunteers providing excellent restoration and monitoring actions within the Park. The requirement of the King County grant (and the proposed actions in the Compensation Monitoring Plan (2006)) was that professionals would train and mentor volunteers and

Comment Summary	Response
	provide the technical analysis of the lab data from the volunteer collected water samples.
23. Supportive of the proposed Phase 2 project, proposed fields, and habitat configuration.	A minority opinion of the over 155 comment letters received.



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December 28, 2006

Attn: Ann Uhrich
U.S. Army Corps of Engineers
Regulatory Section
Seattle District
P.O. Box 3755
Seattle, Wa. 98124-2255

**RE: Review of Draft Wetland Compensation Plan and Monitoring Plan for Magnuson Park Phase 2 Development
COE #200600052**

Dear Ms. Uhrich:

The Friends of Magnuson Park have requested that I review the wetland-related aspects of the park's Phase 2 development plan. This letter provides my comments on this review, which I submit for your consideration in your permitting decisions.

I have reviewed the following documents for this analysis:

- *Conceptual Wetland Compensation Plan for Magnuson Park Phase 2 Development, Seattle, Washington* (Sheldon and Associates Inc., January 2006)
- *Monitoring Plan for Wetland Compensatory Mitigation for Magnuson Park Phase 2 Development, Seattle, Washington* (Sheldon and Associates Inc., February 2006)
- *Technical Memorandum: Stormwater and Wetlands Hydroperiod Analysis* (MKA, January 18, 2006)

1

Given the amount of time that has elapsed since the inception of the project, and because the second phase is expected to begin soon, I found the project documents to be totally inadequate with respect to mitigation design. This design is still very conceptual. This is not a single family residence with a 0.1 acre design, this is a huge public project asking to fill 6-acres of wetland and design 15 acres of complex wetland habitat (4.01 acres of enhancement and 10.05 acres of creation) in an area where few other wetlands exist, so every bit of habitat is critical for existing wildlife. The background studies have been done, but design criteria are yet to be finalized. I would have expected that we would be at an 80 to 90 percent design stage at this time, but no specific, individual-mitigation-area hydrologic modeling has yet been done, which means that at best we are at a 50 percent design stage. There is surprisingly little detailed information offered in this 74-page plan, which is completely disproportionate to the scale of the project, the time that has elapsed since the project was proposed, and the stage of permitting that we are at. I feel a considerable amount of work still needs to be done before the permit application for this project should be considered complete.

Mitigation Plan

2

The most significant data gap in this plan is the lack of hydrology data for both the existing wetlands and the areas where created wetlands are proposed. No available information indicates that a hydrologic analysis has been done that could be used to develop a hydrologic regime for each individual mitigation area that is proposed. The only discussion of hydrologic modeling

comprises vague statements such as "It is not expected that changes in hydroperiod will be an adverse effect of the project" and "It is expected that the percolation zones under the surface of the field will actually prolong wetland hydroperiods slightly" (p. 16, paragraph 2); or "Change in hydroperiods may be caused by changes to the outlets (e.g., berms, restricting outlets, backwatering, etc.) or change in wetland configuration through grading" (p. 31, section 5.1).

3 In fact, no actual mathematical modeling of the hydrology has been done that would substantiate this claim in the case of either the sport fields or the subbasins where the existing to-be-enhanced and proposed created wetlands are to be located. Both the mitigation plan and the storm water and wetlands hydroperiod analysis identify that wide swales around athletic fields will transport surface and subsurface flows to wetlands, but there has been no analysis of this transport that identifies volumes that will be transported, the periodicity of the flow, where and how much of the discharge will be directed to the wetlands and how much will be lost to infiltration and evapotranspiration, whether the swales will be designed to treat runoff, and so on. None of these questions has been answered for any of the areas discussed in the report.

4 A proposed regime of depth and inundation for Wetlands B1 and B4 is given on pages 38 and 39 (Conceptual Wetland Compensation Plan), but no hydrologic modeling has been done to determine whether the water is available for the areas identified, at the times identified.

5 Infiltration rates are "assumed" but are not measured or determined from actual field and modeling assessments. Stating "the marshes may or may not hold water all summer, depending upon input from occasional summer rainfall events" (p. 39, paragraph 1, Conceptual Wetland Compensation Plan) is language that one would expect in an early conceptual design, not in a design that is expected to be installed in the near future. Agency staff needs to be able to see that there will be sufficient hydrology, not just that we *want* the described hydrology to occur.

6 Wetlands E1 and E2 are proposed to be partially filled and partially enhanced (p. 39, Conceptual Wetland Compensation Plan). Filling part of a wetland and expecting the remaining part to still function is very complicated. No details are given about how this will be accomplished. The hydroperiod of wetland E1 is proposed to be changed, but no details are given about this change. Instead, only vague wording is given about how the water will flow, but no details on the grading, if the quantities collected from the under-drain system of field 1 will be sufficient, too much, or not enough, and if it will need to be controlled through weirs and a pre-collection area. We do not know what the proposed regime will be (depth, duration of depth and frequency of inundation) at the various portions of the growing season. The hydrology inputs to E2 are proposed to "remain consistent" (page 40, Conceptual Wetland Compensation Plan). If the adjacent areas are to be graded and ditched and drained internally (including sport fields covered in either natural or synthetic turf underlain by a sand and gravel base underlain by a drainage network of perforated pipes trenched into the field and bedded in gravel), that will replace the surface-drained areas and existing wetland area that is to be filled, how can the hydrology inputs remain the same? Simply stating this does not make it true. A detailed modeling of the area, it's drainage from the proposed areas, including drainage numbers for each field surface type and including rainfall data for the different times of the growing season, is all necessary data. Data that had not been collected or analyzed for this submitted plan.

7 Polygon M is proposed to be "passive" enhancement and the hydrology is proposed to "remain the same" (page 41, Conceptual Wetland Compensation Plan). It is difficult to see how this can be true, given that the overall topography of the site means that water will come from the north (Polygon E) and west (Polygons N and B and the Commissary that is to be removed and all the impervious surface removed). These areas are all proposed to be drastically altered in terms of

9 grading and installing sport fields with various surfaces and drainage characteristics. The marsh ponds are proposed to be good amphibian habitat. Amphibians require very specific water depths and very specific thin-stemmed emergent species at very narrow time windows. How can the design be expected to provide this if the source, amount of flow, and temporal aspects of the flow are not known? Again, the proposed design will need to be considered and the proposed hydrology will need to be modeled before any specific details on the enhancement can be developed.

10 Wetland Creation areas for the promontory Point ponds has identified that these ponds will be dependent on groundwater for the bulk of their hydrology inputs (page 46, Conceptual Wetland Compensation Plan). I know of no groundwater studies that identify the depth of groundwater throughout the year and over a few years. Depending on groundwater without this data is impossible. Depending on groundwater for the source of hydrology is perhaps one of the most difficult of design constraints because groundwater can vary by many feet over the course of a year and between years. It is most often impossible to depend on groundwater being at specific elevations because it tends to fluctuate so much.

11 Wetland creation for the rest of the acreage is dependent on a very conceptual hydrology that is based on observations of existing conditions in existing wetlands, not on any measurements of flows or modeling of hydrology under proposed conditions. Most of these regimes appear to be ecologically sound but no one knows if they are feasible, nor if the plants proposed will be provided with a hydrologic regime that will be tolerated. It is not appropriate at this stage of planning to be stating "it is assumed that the wetland will have a typical hydroperiod of becoming wet every fall, remaining full all winter, and slowly losing surface water into spring and be dry by early summer of each year" (page 47, Conceptual Wetland Compensation Plan). The project should be past assumptions and to actual numbers that have been measured, modeled and applied to an actual design. Additionally, at this stage of design, it the plan should be discussing the "wetland complex and ten-inch drops through a series of broad weirs" (page 47, Conceptual Wetland Compensation Plan) while providing information on where the drops will occur, what the hydrology regime is for each cell, and where the water inputs are coming from. None of this information has been provided.

12 Offering a list of potential species for each mitigation area is something one offers for a very preliminary design. At this point, I would expect to see actual polygons with a prescribed hydrologic regime and species that match that regime. Nowhere in this plan is this detail offered.

13 The same issues are left unanswered for the water quality treatment aspects of the design. No specific design characteristics have been discussed for any of the wetlands adjacent to the sport fields or parking lots. No discussion has been made of what pollutants are expected to be in this runoff and at what concentrations. No one has addressed whether there are historic contaminants in the fill that was used since the naval base and park were developed. One composite study about the synthetic turf itself has been mentioned, but there has been no discussion about what would drain onto and off of the field or about what might leach from the fill. There has been no discussion of the adjacent parking areas and their drainage. We do not know what fractions of each pollutant are expected to be retained in the media above subdrains and what fractions are to flow to the wetlands and ultimately to Lake Washington.

The mitigation plan (p. 38, paragraph 3, Page 47 paragraph 2; Conceptual Wetland Compensation Plan) proposes storm water treatment before wetland discharge, using StormFilters by Stormwater Management, Inc., with a zeolite/perlite/activated carbon medium. However, a comprehensive study of storm water treatment practices by the California

Ms. Ann Uhrich
December 18, 2006
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Department of Transportation (*BMP Retrofit Pilot Program Final Report*, CTSW-RT-01-050, January 2004, in Dr. Rich Horner's analysis, December 2006) has shown that this medium is less effective than nonproprietary sand filters, extended-detention basins, and biofiltration swales and filter strips.

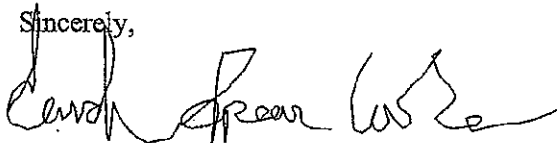
Monitoring Plan

I am not going to comment on the monitoring protocols because the Corps does not have authority on how the monitoring gets done, only that it gets done. I will provide these comments directly to the Oversight committee in the near future.

I urge you to reject the permit application at this time and to require the applicant to provide a comprehensive plan specifying in detail how the hydrology will be dealt with and how water quality will be managed both during construction and then permanently when the site goes into operation. I have been asked in the past to resubmit the mitigation plan to include the same types of information I am identifying here, on projects much smaller and much less important.

Please call if you have questions on my comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sarah Spear Cooke', written over a horizontal line.

Sarah Spear Cooke
Certified Professional Wetland Scientist

cc: Washington Department of Ecology

Responses to Cooke Scientific (December 28, 2006)

Comment responses below are numbered to correlate to paragraphs or specific sequential numbered comments within a paragraph, as annotated on the attached copy of the Cooke, December 28, 2006 comment memo.

1. Cooke's memo of December, 2006 evaluates only documents that were prepared in January and February of 2006; nearly 11 months prior to the date the comments were prepared. It is unclear why the author did not also review the complete set of the permit drawings for the JARPA (submitted to the COE in February, 2006) and/or the Public Notice package which was available on the City's web page (June, 2006) prior to her December, 2006 memo. The Public Notice package provided 65% technical drawings that illustrated the complete detailed site grading, weir placement and proposed elevations, cross-sections, planting details, and specifications for the proposed site design.

Within paragraph 1 of the comment memo, the author states that "...no specific mitigation area hydrologic modeling has been done..."; however in the lead-in to the paragraph she specifically states she has reviewed the Magnusson Klemencic January, 2006 document: *Technical Memorandum: Stormwater and Wetland Hydroperiod Analysis*. The Magnusson Klemencic (MKA) document is the detailed hydroperiod analysis for each proposed wetland condition, based on daily precipitation and evaporation data from 26 years of historic data. It is unclear why the author would state that she reviewed the document and then repeatedly state in the subsequent text of her memo that detailed hydrologic modeling data was not used to inform the project design.

2. As noted in #1, above, this paragraph refers only to the generalized text within the Compensation Plan, but fails to acknowledge the detailed hydroperiod analysis in the MKA report that substantiates the conclusions in the Compensation Plan.

Data collected during the wetland delineation in 2005 documented that the soils on the project site basically act as impervious surface in existing conditions. No percolation or infiltration occurs in any significant manner. The engineered fields are designed to infiltrate through sandy soil, with the water collected in an under-drain system, and then discharged into outlet swales towards the wetlands. The soils and under-drain system in the fields will therefore hold water longer than the existing soil conditions on the site.

Creating slight berms and forming constricted outlets on wetland areas such as the Grove Marsh north and east of Field 3 will function to increase the duration of surface inundation in the wetland over existing conditions. The modeled data presented in the MKA report indicates the wetland will have an approximate depth of 9 inches from December through the end of April based on the 26 years of historic precip data. In existing conditions, there is no 'outlet' to the wetland and

surface water leaves the wetland through unconstrained overland flow. The proposed shallow berm at the outlet is designed to create a modest inundation with stable water levels during the early growing season to favor plants more adapted to longer duration saturation, rather than pasture grasses compatible with periodic soil saturation.

3. See the MKA (January, 2006) report for hydrologic modeling data.
4. The TIR (Stormwater Technical Information Report) prepared in March 2007 (MKA, March 2007) does address the issues of water quality treatment through the fill soils of the fields, the vegetated swales and wetlands located below the fields. The 401 Water Quality Certification approval (Ecology; April, 2007) was conditioned and granted based on technical review of the adequacy of the TIR illustrating how water quality would be handled on the site.
5. See the MKA (January, 2006) report for hydrologic modeling data. As noted previously, the Wetland Delineation Report (Sheldon & Associates, 2005) documents the impervious nature of the soils on the site. It is assumed for all hydrologic modeling that infiltration rates are absolutely minimal.
6. See the MKA (January, 2006) report for hydrologic modeling data and graphs for water year elevations on all the Marsh Ponds, Linked Ponds, Entrance Marshes. These systems are designed to fill with fall rains and begin to dry in mid-late June; based on 26 years of historic precip data. They are all designed to have stable water levels, with little fluctuation based on a wide unconstrained outlet design.
7. See the MKA (January, 2006) report for hydrologic modeling data on the Grove Marsh (wetlands E1 and E2). It is designed to get approximately 9 inches deep in late fall/early winter; then to begin to dry out in mid to late June based on 26 years of historic precip data. See note 6 regarding expected lack of water level fluctuations during the winter/early summer growing seasons.
8. See the MKA (January, 2006) report for hydrologic modeling data.
9. Amphibians, particularly Pacific Chorus frogs, prefer shallowly inundated wetlands that seasonally dry out completely by late June (to deter the presence of bull frogs); and which have stable water levels from December through March/April. The Marsh Ponds are designed specifically with this hydroperiod as the main design criteria. The depth of the ponds varies slightly (approximately 16-24 inches) and is designed to provide habitat for a range of native thin-stemmed sedge and rush species as detailed in the 95% plan specifications available on the City's web page for the Park. These are the preferred habitat parameters for breeding chorus frogs; the 'target species' for these wetlands based on years of public input.
10. This is simply a mis-statement of the information provided in the Conceptual Wetland Compensation Plan (January, 2006). On pg. 46 of the Compensation Plan in a section describing the Entrance Marsh ponds, the following sentence occurs:

“The exception will be for the Promontory Point ponds where excavation to re-establish wetland in that area will be over 15 feet deep to **expose** groundwater and create deep-water habitats” (**emphasis added**).

On pg.50 of the Compensation Plan, in the portion of the document describing future conditions in the Promontory Point Ponds, it is clearly stated that;

“The Promontory Point ponds will be excavated to a depth up to 15 feet... The deep excavation will expose the groundwater in this area which is loosely correlated to lake water levels. In addition to groundwater, the Prom Pt ponds will receive surface sheet flow from the entire Marsh Pond complex to the northwest, as well as runoff from the remaining portion of the parking, west of the Commissary. **However, the most significant input of water for the Prom Pt ponds will be a constant flow of approximately 400 gallons per minute of water that is currently being discharged to Lake Washington through a pipe...**” (**emphasis added**).

11. See the MKA (January, 2006) report for hydrologic modeling data.
12. Detailed species are provided in the 95% plan sets available on the City's web page for the Park.
13. See the response letter to Dr. Horner's memo for a detailed response to water quality issues he has raised.

Uhrich, Ann R NWS

From: John Ferguson [lynnferguson@stanfordalumni.org]
Sent: Thursday, December 07, 2006 2:30 PM
To: Uhrich, Ann R NWS
Subject: Seattle Parks and Recreation 2000600052

U.S. Army Corps of Engineers, Regulatory Branch Ms. Ann Uhrich PO Box 3755 Seattle, WA 98124-3755

Thursday Dec. 5, 2006

Dear Ms. Ulrich,

I wish to comment on behalf of Magnuson Environmental Stewardship Alliance on the proposed Seattle Parks Department Phase 2 development at Warren G.

1 Magnuson Park. MESA has been involved in habitat restoration at the park for 10 years and we very much want to see the wetlands at the park restored for the benefit of the priority species, including Chinook salmon listed as threatened by the federal government and NMFS as well as protecting the water quality of Lake Washington into which these waters feed, and for the priceless educational and habitat value these urban wetlands provide.

2 Unlike many urban wetlands, for instance Genesee and Union Bay, these wetlands were never used as a garbage dump. They were saved from this fate by the Navy that simply flattened the undulating forested wetland, flattened the 200 foot plus mountain on site, and cut away both sides of Promontory Point hill to fill the historic lake on site bordering Lake Washington. The Navy did not bring in fill dirt. They simply reshuffled what was there. Borings done for a proposed "Concept Mud Lake Restoration Plan" by Parametrix in 1998 for the city, show fill of alluvial till, peat and clay deposits. The Seattle Parks Department, however, in the 30 years they owned the land, have brought in lots of fill to recreate "Kite Hill," fill for ball fields, a ten plus acre off-leash dog area through the wetlands to the lake, fill in the Northshore area, and a P-Patch. The most recent fill, many thousands of yards of fill in phase 1 to rebuild 14 acres of grass ballfields with an elaborate drainage system and slope that has caused disturbance to the habitat in the Frog Pond area of the park. Another hill of fill dirt awaits behind the old Commissary for use in filling the proposed 6 acres of wetlands in phase 2.

3 MESA is concerned about two parts of the plan. First, there is another place to put the fill for field number three which would not necessitate the filling of valuable existing wetlands. This field could simply be moved to the immediate west of where it is. In fact a field is already designed to be built there in a later phase. It would make sense in this phase to cause less impact until the monitoring plan has a chance to be completed to see what the surface water runoff impacts and lighting impacts are on the wetlands.

The second concern we have with the plan is the impact the surface runoff from Phase 1 is having on the existing wetlands and amphibian population and added concerns about what will happen with Phase 2 runoff. The wetlands, nature being the great healer she is, were actually functioning quite well to soak in the rainfall and gradually send the cleaned water into Lake Washington. Old Navy pipes had clogged somewhat and surface drainage flowed the flow and allowed for establishment of a wetland plant community naturally over the last 30 years. The delineation done by Sheldon and Associates shows numerous wetland areas. The park is now home to the largest breeding colony of Pacific Chorus Frogs in the city much to the delight of the neighborhood each March as their calls bring to mind tropical jungle climates. As you know, though, these frogs are tree frogs who live all over the park and migrate to "Frog Pond" each year only for sex. They are poor swimmers and like still water.

The Frog Pond area has been perfect for them and they are very particular about where they chose to live. Frog Pond dried up at the end of July and was stagnant water. Chorus Frogs know what they like. We know this since colonies have been started only to fail in may urban areas including Ravenna and a park in Shoreline.

MESA volunteers have been informally monitoring these frogs for years. This last year, knowing changes were coming, we decided on a formal protocol. The frogs were monitored

using the "Frog Watch USA" protocol developed by USGS and a more elaborate protocol developed for this site which included photos, egg and frog counts, horizontal water changes, water flow rate etc. 17 observations were made from January through August, approximately 2 per month.

4 The results were discouraging. The frogs arrived March first, were in full chorus mid to late March but they called and mated in the vernal ponds to the south of Frog Pond which dried up too early for the majority to survive. A few frogs voices were noted near Frog Pond but most of the chorus was south near the vernal ponds. Frog Pond had so much water in it due to the run off from the newly filled, graded and drained Sports Meadow, that traditional breeding areas were covered with water and the water flowed rapidly through the pond from north to southwest where the drain was placed to keep the water level steady. This level was too high for the traditional breeding areas to be exposed and it often clogged up with gravel and straw although monitors cleared it as part of their protocol. No egg masses were found during monitoring at Frog Pond although many were found in the vernal ponds to the south. Frog Pond now had much more water than traditionally and many more ducks were present. Research shows that migrating female ducks need protein to breed successfully and pollywogs are a common source. In May, 2 pollywogs were captured in a net sweep of Frog Pond but more than 50 were present in sweeps at each of two vernal ponds. In June hundreds of very small pollywogs were in the vernal ponds and a few larger, less developed pollywogs in Frog Pond. When the ponds dried up, I transferred several hundred pollywogs to Frog Pond but many did not survive. It was interesting to note that they seem to have the ability to develop more quickly into mature, although small, frogs as the water dries up. Frog Pond never did dry up for the first time in the 30 years of my observation since the fields were watered throughout the summer. Because dragonfly larvae and giant water beetle larvae can now breed in the pond, too much water, and too rapidly flowing water is present, leading to the breeding of the Chorus Frogs in vernal ponds that dry up too quickly, I think this population is now in danger of extinction. It will not happen in one year since adults live several years. What I find disturbing is that this did not need to happen. A detention pond for the new phase 1 Sports Meadow fields was planned for the east side, near the existing tennis courts. The water was then planned to flow east and then be diverted south into the wetlands on the east side of the internal wetland road and parking lot. Either Parks did not know the importance of stagnant water and constant water levels to the successful breeding of this frog or they did not care.

5 Monies have now been obtained through the Mayor's budget to fund removal of the internal wetland road and parking lot. MESA feels this is extremely important for the success of the wetland system with the added storm water runoff pressure. We urge you to require Parks to do this as part of Phase 2 development, removing the road, parking lot and replanting with native wetland plants. This will allow a connection of both parts of the wetlands and more natural runoff area. We urge you to also require that the remaining "tubs" be built surrounding the fields to be built or at least require that all drainage be on the surface, not through ditches and 6" plastic pipes directly into a discharge system into Lake Washington. Seepage through the surface sands and gravel allow the wetland to do its work.

6 We are concerned about the monitoring plan and maintenance as well. The City Council just asked for 2 or 3 years. Our understanding is that the Corps often requires a longer time period. We certainly want this plan to be successful and protect our wetlands and water quality.

7 Finally MESA has concerns about the sewer system running through the wetland area. We understand this the Navy had septic tanks and drain fields only and that a trunk line and pump system was added by parks in the later 1970's which is now not functional. We would like to be sure this system is checked before it is restarted to be sure no pollution is getting into Lake Washington. We understand monies have been made available for this in the mayor's budget.

Thanks you for your considering.

Lynn Ferguson MESA
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Response to Magnuson Stewardship Alliance/Ferguson (December 5, 2006)

1. There is no Chinook habitat on the Phase 2 project site. There will be a net increase in water quality conditions leaving the site after the project based on removal of nearly 12 acres of impervious surfaces, providing treatment of existing pollution generating surfaces, providing treatment for currently untreated stormwater being discharged directly into Lake Washington, and increasing wetland habitat acreage on site.
2. Historic alterations of this site include lowering Lake Washington by approximately 9 feet in 1912 when the Chittenden Locks were constructed. This caused a former shallow embayment on the shoreline of the Lake to "become" Mud Lake, a large peat-based wetland complex that was completely filled in the 1930's during construction of the Naval Air Base. Fill was placed at a minimum of 7+ feet 'over' Mud Lake based on an in-depth comparison of elevations of the former Mud Lake to existing conditions. There was a massive cut/fill on the site; the former Sand Point Head and the 'nose' of Promontory Point were cut and graded to provide at least some of the fill for Mud Lake. It is unknown if other fill was brought in from off-site to create the appropriate grades for the Naval Air Station: records of bringing soils from off-site from the 1930's are rather inconclusive.

Kite Hill was recreated, as part of the design process decades ago, to 'restore' the elevation of Sand Point Head. Additional fill has been brought onto the site, and stockpiled on an area of existing pavement to the east and northeast of the Commissary Building. Fill has been used for the filling associated with the Sports Meadow (Phase 1); and currently topsoils from various City projects have been stockpiled in this location in anticipation of the Phase 2 project. These soils are slated for use in the habitat zones and are intended to result in cost savings (compared to purchasing the same volume of topsoil). Soils brought onto the site are tested for toxics based on standard Seattle Parks protocols (C. Jewett, pers. comm., 2006).

3. Field 3 is proposed to be placed east of the Parade Ground Fields in order to allow the continued use of those grass fields for scheduled play and informal warm-up and non-league use.
4. The depth of inundation and the periodicity of the hydroperiod of Frog Pond served as a 'reference site' for the flow-through Marsh Ponds proposed in Phase 2. The Marsh ponds are less than 2 foot deep that fill with the fall rains, have unconstricted outlets to preclude water level fluctuation, and will dry out by early-summer (to eliminate bull frog habitat). These design parameters emulated the existing conditions of Frog Pond.

Seasonal droughts and man-made changes have continued to influence the chorus frog population at Magnuson. Natural succession, and buffer restoration plantings around the margin of the Pond have resulted in the establishment of robust native shrubs and sapling-stage in the wetland and it's buffer. The trees and shrubs will eventually shade the pond and change the hydroperiod through "natural causes" over time. The habitats in Magnuson should be considered immature, given their state of

recovery for only 30 years since the Naval Air Station decommissioning. Change is a constant ecological factor as weedy pioneering species are slowly being replaced by more tolerant long-lived woody natives as soils recover and regain vitality. Future conditions in the Park can not and should not be managed to try to maintain some *status quo* in a naturally dynamic and recovering ecosystem.

5. The sanitary sewer system for the Naval Station Sand Point (now identified as the Warren G. Magnuson Park) ultimately ties into the regional Metro / King County sewer collection and treatment system. The Sand Point system consists of both gravity sewer lines (at higher elevations) and gravity and pressurized sewer lines (at distant lower elevations, including the shoreline). Park improvements in the 1970's included modifications and improvements to this system but maintained the sanitary sewer infrastructure that ultimately connected to the regional sanitary sewer system. No sanitary sewers on the site drain to Lake Washington. In addition, no sanitary sewer construction or expansion will occur as part of this project. The only sewers that will be modified as part of this project will be storm sewers that convey storm water runoff. The project will also provide water quality treatment for storm water that currently passes untreated into Lake Washington, resulting in a net improvement to storm water quality draining to Lake Washington.
6. Ecology's Water Quality Certification (#4208) (April, 2007) has required 10 years of monitoring. It is likely that the Corps will parallel that requirement through the 404, if it is granted.

GENDLER & MANN, LLP

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November 20, 2006

Ann Uhrich, Project Manager
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98124-3755

Re: Comments on Public Notice for Seattle Parks and Recreation
Reference: 200600052

Dear Ms. Ulrich:

These preliminary comments are submitted on behalf of Friends of Magnuson Park. These supplement comments you will received separately from members and consultants.

At the outset, we once again request an opportunity to supplement our comments based on a review of at least the following documents that we anticipate are either already on file but have not been provided in response to FOIA requests; or that are necessary for this the Corps' processing of this application: (1) Hydrologic Analysis; (2) Section 404(b)(1) Analysis; and (3) NEPA analysis.

A. An Alternatives Analysis is Necessary

Section 404(b)(1) of the Clean Water Act prohibits the discharge of dredged or fill materials into waters of the United States if there is a practicable alternative available that would have less adverse impact on the aquatic ecosystem. 40 C.F.R. § 230.10(a). For non-water dependent activities associated with discharges in special aquatic sites, such as wetlands, practicable alternatives that do not involve discharges into wetlands are presumed available. 40 C.F.R. § 230.10(a)(3). Further, all practical alternatives that do not involve discharges to wetlands are presumed to have less impact on the aquatic ecosystem. *Id.*

Athletic fields and trails are non-water dependent activities. Consequently, it is critical that the Corps require a Section 404(b)(1) alternatives analysis. This analysis must describe at least the following two options: (1) fulfilling the applicant's proposal to create new athletic fields by creating these fields at other properties that do not require the filling of wetlands; and (2) fulfilling the applicant's proposal to create athletic fields within Magnuson Park without filling existing wetlands and without artificial light and drainage.

The alternative site review is not limited to existing park property. Even if not currently owned by Parks, if it is otherwise a practicable alternative, "an area not presently owned by the applicant but that can be obtained, utilized expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered." 40 C.F.R. § 230.10(2).

We are confident that a careful alternatives analysis will demonstrate that the City of Seattle has abundant park and school properties that can host athletic fields without filling wetlands and disrupting existing habitat. The City, however, has very few parks that contain wetlands and wetland habitat. Because non-wetland fill alternatives exist, this permit application must be denied.

B. NEPA Review is Necessary

The Public Notice does not identify the necessity for review under NEPA. We anticipate that Parks and Recreation will argue that its proposal has already been reviewed under Washington's State Environmental Policy Act ("SEPA"). The 2002 SEPA FEIS and 2003 SFEIS, however, are insufficient for the purposes of environmental review under NEPA. The Corps must prepare its own review under NEPA for at least three reasons:

First, while the NEPA regulations do contemplate joint environmental review under NEPA and SEPA, the joint review must actually be a joint review. 40 C.F.R. § 1506.2. In this case, the 2002 FEIS and 2003 SFEIS were prepared only under SEPA – it was not a jointly prepared document between the Corps and Parks and Recreation. While the NEPA regulations do allow federal agencies to adopt federal EIS documents prepared by other agencies, 40 C.F.R. § 1506.3, these same regulations do not contemplate or allow for the federal adoption of a state EIS.

Second, NEPA requires the review of alternatives, including off-site alternatives in for both EAs and EISs. 40 C.F.R. §§ 1508.9, 1502.14. The 2002 and 2003 SEPA documents failed to examine alternatives outside of Magnuson Park. The 2002 and 2003 SEPA documents also failed to examine alternatives that do not require the filling of wetlands – information critical to the Corps' evaluation. Thus, the SEPA documents fail to provide the environmental information necessary for the Corps to take action on this permit.

Finally, the SEPA documents were prepared by the applicant Parks and Recreation and its consultants. In particular, the wetland and habitat portion of the SEPA documents were prepared by the same consultants that prepared the JARPA application under review in this public notice. NEPA prohibits environmental documents prepared by the applicant or the applicant's consultant. NEPA requires federal environmental review be conducted by the agency or a independent third party consultant retained by the federal agency in order to avoid any conflict of interest. 40 C.F.R. § 1506.5(c). Because the SEPA reviews were prepared by the applicant's consultants who have an inherent conflict of interest, these reviews may not be relied upon for the purposes of NEPA.

Ann Uhrich
November 20, 2006
Page 3

C. The Corps Must Analyze the Indirect Effects of the Proposed Project

The Corps is required to review the potential impacts on the biological characteristics of the aquatic ecosystem. This includes impacts to both aquatic species and other wildlife associated with the aquatic system, including resident and transient birds and amphibians. 40 C.F.R. § 230.32. Magnuson Park contains one of the richest concentrations and diversities of birds in the Seattle area – a population dependent on not only the existing aquatic system, but also the general quiet and dark night-time environment.

In addition to reviewing the direct impacts from loss of existing wetlands, the Corps must also consider the negative impacts on resident and transient bird populations that will be caused by the introduction of a system of artificial lighting and night time noise. The review must consider impacts both to the wildlife, and also to the human's that enjoy using this park for its existing wildlife values. 40 C.F.R. §§ 230.53, 230.54. The application materials contain sparse information on these significant impacts.

We look forward to review of the Section 401(b)(1) and NEPA analysis and respectfully request an opportunity to comment on these documents once complete. We look forward also to your response to these comments.

Please do not hesitate to contact me if you have any questions.

Very truly yours,

GENDLER & MANN, LLP

(Sent via email)

David S. Mann

cc: Friends of Magnuson Park.

Response to Gendler & Mann(November 20, 2006)

- A. An Alternatives Analysis was submitted to the Corps of Engineers on April 6, 2007
- B. The Seattle District Corps of Engineers has determined that the project does not warrant a NEPA analysis at this time. The COE has access to the sequential analysis provided in the DEIS, FEIS, Supplemental EIS, and the Addendum to the FEIS conducted for the Master Plan project.
- C. The Alternative Analysis describes how the on-site concentrated field alternative represents the alternative with the greatest environmental benefit based on the following:
 - Removal of nearly 12 acres of existing impervious surfaces including actively used parking lots;
 - Providing stormwater treatment that meets King County Surface Design standards for existing pollution-generating surfaces that will remain on the project site;
 - Providing treatment for existing untreated stormwater being directly discharged to Lake Washington;
 - Increasing the acreage, structural complexity, species richness and HGM types of wetlands on the site with sustainable sources of hydrology;
 - Increasing the structural complexity, species richness and functions of upland habitats on the site

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RECEIVED

December 18, 2006

GENDLER & MANN, LLP

DEC 2 2006

Ms. Ann Uhrich
U.S. Army Corps of Engineers, Regulatory Branch
P.O. Box 3755
Seattle, WA 98124-3755

Re: Seattle Parks & Recreation 200600052

Dear Ms. Uhrich:

I have been requested by the Friends of Magnuson Park to review aspects of the park's Phase 2 development plan relative to hydrology, water quality, and wetlands. This letter provides my comments, which I request you take into account in your permitting decisions.

I found the project documents to be totally inadequate with respect to storm runoff water quality management. They give shockingly little information, completely disproportionate to the scale of the project and its importance to the Magnuson Park environment. I strongly believe that the permit for this project should be withheld until the applicant provides the information that both you and citizens in their oversight role must have to make proper assessments and informed decisions.

The Technical Memorandum, Stormwater and Wetlands Hydroperiod Analysis (January 18, 2006) offers only the following vague bits of information, which raise far more questions than they answer, as I indicate parenthetically in *italics* font:

#1

Wide swales around athletic fields will transport surface and subsurface flows to wetlands. *(Was there any alternatives analysis to ensure that swales are the best option? Will these swales be specifically designed and constructed to treat runoff? If not, why not? How will the soils be treated in building them? Will they be vegetated and, if so, how? How much of their inflow is expected to reach the wetlands, versus how much will be lost in infiltration and evapotranspiration? Was any consideration given to designing the swales according to low impact development (LID) principles, which reduce often problematic surface runoff and increase beneficial groundwater recharge?)*

#2

Treatment for driveway and roadway storm runoff "may include" StormFilters, ecology embankments, swales, and filter strips. *(Why have the specific treatments not been selected and designed, giving agencies like yours and citizens information they deserve to have? Does anybody associated with this project have an appreciation that these various*

**EXHIBIT 'A' (3 SHEETS)
INDEX OF RESPONSES
TO HORNER MEMO**

#2
(Continued)

options have different purposes, applications, and performance levels? What about other options that are not named and might be better choices for the circumstances? When and according to what criteria will the final selections be made?)

#3

Stormwater flowing to subdrains below natural and synthetic turf athletic fields need not be treated before discharging to wetlands. (Specifically, what pollutants are expected to be in this runoff and at what concentrations? What fractions of each pollutant are expected to be retained in the media above subdrains, and what fractions to flow to the wetlands? Will the pollutants be permanently retained and always in the same fractions, or might the picture change depending on flow conditions and time, as the media get more exposure over coming years? Were the projected effects of pollutants on wetland biota actually analyzed? If not, why not; if so, what are the projections?)

#4

The construction-phase erosion and sediment controls "may include" a variety of standard practices. (Why have the specific practices not been selected and a stormwater pollution prevention plan prepared to specify them, giving agencies like yours and citizens information they deserve to have? What special construction measures should be considered to prevent or minimize the transport of sediments from disturbed ground into wetlands and Lake Washington? What construction management steps will be taken in the interest of this objective? What inspections and maintenance will be performed during the construction period, when adjacent water resources are vulnerable to sediments?)

I also reviewed the Preliminary Storm Drainage Report (December 2001). This document is also simplistic and contributed nothing to answering my questions.

#5

The Conceptual Wetland Compensation Plan for Magnuson Park Phase 2 Development (January 27, 2006, "the Compensation Plan) touches on stormwater management in a few places but likewise does nothing to allay my criticisms. Regarding construction-phase controls, on page 30 the plan states, "Erosion control (silt fencing, straw bales, etc.) will be placed prior to any site clearing to prevent sediment movement into onsite wetlands." This statement is ignorant of what erosion control means, which is the prevention of sediment mobilization from a bare area in the first place. Silt fencing and straw bales are not erosion controls at all, but instead sediment controls, meaning their purpose is to try to prevent sediment transport once it is eroded and already entrained in flow. Moreover, they are relatively ineffective sediment controls. Most informed erosion and sediment control practitioners regard silt fencing as a secondary back-up measure to preventive erosion controls and straw bales as so problematic and ineffective that they should not be used at all.

#6

The Compensation Plan on page 38 proposes stormwater treatment before wetland discharge using StormFilters by Stormwater Management, Inc. with ZPG (zeolite, perlite, activated carbon) medium, which the document declares "a state-of-the-art treatment mechanism." The device is certainly not at the state of the art. This unit, containing the same medium, proved to be less effective than non-proprietary sand filters, extended-detention basins, and biofiltration swales and filter strips in a comprehensive study of stormwater treatment practices by the California

Ms. Ann Uhrich
December 18, 2006
Page 3

#6

(Continued)

Department of Transportation (BMP Retrofit Pilot Program Final Report, CTSW-RT-01-050, January 2004). The department did not accept the StormFilter as an approved practice for future application.

#7

The Warren G. Magnuson Park: Drainage, Wetland/Habitat Complex and Sports Fields/Courts Project, Phase 2 Draft Biological Evaluation (January 17, 2006) continues the trend of vagueness and incompleteness relative to stormwater management seen in the other documents. Section 4.2 covers erosion and sediment control for this large project in five sentences that do nothing more than give a laundry list of measures.

#8

The Monitoring Plan for Wetland Compensatory Mitigation for Magnuson Park Phase 2 Development (February 9, 2006) "the Monitoring Plan" lightly mentions another aspect of storm runoff water quality management but again provides insufficient detail. This document states that an existing buried storm drain pipe will be daylighted and its flow sent into pretreatment before being routed through 2000 linear ft of wetlands and then to the lake. What the pretreatment might entail is not presented here, although it could be the StormFilter proposed in the Compensation Plan. The definition of what stormwater treatment actually will be provided is so haphazard in the various project documents that there is no way of knowing if it would be adequate to protect the wetlands. The lack of care devoted to this important consideration in the years this project has been under development gives little confidence that stormwater will be adequately managed.

#9

The water quality element in the Monitoring Plan is grossly inadequate. First, it involves only grab sampling, meaning taking a sample at just one point in time during a storm. The only way to define storm runoff water quality is to collect flow-weighted composite samples throughout the event. Only seven samples will be collected each year, an insufficient number to be representative of the more than 100 rain storms we typically receive in a year. Obtaining storm

#10

samples with good quality control is an intricate task, but the proposed program will be conducted by volunteers without the necessary experience. Finally, the Monitoring Plan

#11

proposes analyzing for only a small number of pollutants, missing entirely the metals and organic chemicals that are toxic to aquatic life.

I urge you reject the permit application at this time and to require the applicant to provide a comprehensive plan specifying in detail how stormwater will be managed during construction and then permanently when the site goes into operation. I would be pleased to discuss my comments with you and invite you to contact me if you wish.

Sincerely,



Richard R. Horner

Cc: Washington Department of Ecology



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January 11, 2007

Ms. Cynthia S. Walcker
Federal Permit Coordinator - 401/CZM
Department of Ecology, NWRO
3190 160th Avenue SE
Bellevue, WA 98008

RE: U.S. Army Corps of Engineers Reference #200600052
Proposed Warren G. Magnuson Park Phase 2 Development Project: Response to Dr.
Horner Comment Letter on Stormwater

Dear Ms. Walcker;

Thank-you for this opportunity to provide a response to the comment letter from Dr. Horner regarding potential stormwater effects related to the proposed Phase 2 of Warren G. Magnuson Park, in Seattle. We received a copy of Dr. Horner's comment memo from you on Tuesday, January 2nd and were requested on Thursday, January 4th to have our responses back to you by Wednesday, January 10th. We understand that this extremely tight turn around is necessitated in order for Ecology to make a permit decision by the statutory deadline of February 2nd, 2006.

Given the short time-frame, we have attempted to be as fully responsive as possible and are providing detailed responses below, numbered to reflect Dr. Horner's memo which is attached to this letter for reference. We have also provided an attached response letter from Mr. Brian Taylor, P.E., of Magnuson Klemencic Associates, the civil engineers for the Magnuson Park design team. We would be happy to provide as CD or paper copy, a set of the 96% construction drawings for the project—as submitted to the City of Seattle on Monday, January 8th, 2007.

We appreciated reading Dr. Horner's comments on the 60% level design drawings provided at the time of JARPA submittal and the Public Notice to the Corps last year. We believe, based on the current state of 96% design completion, his comments and questions have been and will be adequately addressed. One very significant point of clarification, however, is in order: Dr. Horner assumed that the February 2006 Monitoring Plan for Wetland Compensatory Mitigation for Magnuson Park Phase 2 Development represented the proposed stormwater monitoring plan for this project. It does not. The Compensatory Mitigation monitoring plan was developed as a requirement of the Seattle City Council, with input from active neighborhood citizens' groups, and with the intent to provide monitoring and adaptive management strategies for the establishment of viable wetland habitats in the Park.

It has always been the assumption of the Magnuson Park Design Team and the City of Seattle that development of a Stormwater Management Plan, incorporating the requirements of the 2005 WDOE Stormwater Manual, would be required by Ecology as part of the permitting process. Attached to this letter is a copy of the City of Seattle Council Ordinance from June 7th, 2006 that makes it clear in several locations that the City understood that even the proposed monitoring for the wetland compensation plan would be conditioned by reviewing agencies (emphasis added);

*"WHEREAS, pursuant to the guidance in Section 4(b) of Ordinance 121502, the Department of Parks and Recreation has presented to the Council a Wetland/ natural area Monitoring and Adaptive Management Plan, called the "Monitoring Plan for Wetland Compensatory Mitigation for Magnuson Park Phase 2 Development," which **plan may be amended as requirements are imposed by various local, state and federal regulatory agencies for which approvals must be obtained** and which amended plan the Department of Parks and Recreation will implement to ensure the success of the wetland/ natural areas;"*

*"When the "Monitoring Plan for Wetland Compensatory Mitigation for Magnuson Park Phase 2 Development" **has been reviewed by applicable local, state and federal regulatory agencies and revised, if necessary, to reflect any permit conditions imposed by the regulatory agencies, the Council anticipates adopting the rest of that plan,...**"*

We anticipate preparing the Stormwater Monitoring Plan, based on the 2005 WDOE Stormwater Manual, as one of the conditions of the 401 permit. Given the extremely short turn-around time for response to these comments however, it simply was not possible for us to prepare the Stormwater Monitoring Plan in the last few days. We anticipate that the stormwater quality monitoring program will be prepared as a condition of the permit for the project, allowing for the use of the completed project design to direct the stormwater monitoring design. We expect, as you read the responses below, you'll gain an understanding that we have considered and addressed the issues raised by Dr. Horner in his review of documents from nearly a year ago.

The stormwater management provisions for the Park were designed to meet King County's stormwater design standards where at all practical. One of the 'products' required by King County's Manual is the TIR (Technical Information Report) that shows the decision making matrix for why particular treatment types were chosen, or not, for stormwater treatment. A formal TIR will be prepared and submitted to Ecology by January 29th, 2007. Within our responses below we have provided information that explains the rationale for the particular treatment types chosen for the proposed project.

Provided below, in a numbered format, are our responses to Dr. Horner's comments. For broader discussion of the stormwater design considerations, please see Mr. Brian Taylor's comments (Magnusson Klemencic, January 10, 2007), which are attached to this letter.

I. Use of Swales to Convey Runoff

Because this site is so flat and has only a very small amount of topographic relief for engineered drainage systems, it is imperative to keep stormwater flows at or near ground surface and to minimize the use of piped storm drainage systems. Vegetated swales are the preferred approach to conveying runoff for this site because they provide some water quality treatment, maintain the hydraulic grade line of the storm drainage conveyance paths at an adequate elevation to direct runoff to the desired locations (e.g. wetland cells), allow water to be expressed on the ground surface where it enhances wildlife habitat, and are less expensive and easier to maintain than buried piped conveyances. It is critical to maintain or replicate the flow-path of sheet/surface flows on the site in order to maintain or improve the hydroperiod of the remaining or proposed wetland on the site.

The Magnuson site was the location of a former Naval Airstation which was demolished in the 1970's. Ground water infiltration and groundwater recharge on the site are negligible to non-existent in most locations due to the compaction of the soils. The approved Wetland Delineation Report for the site (2006) documents that wetlands on the site have formed due to impoundment of precipitation and sheet flow in shallow scattered depressions, not as expressions of shallow groundwater. In current conditions, precipitation sheet flows across the site, collecting in these shallow depressions, and eventually leaves the site through a ditch and swale system east, into Lake Washington. Water that remains impounded in the shallow wetlands leaves as evapotranspiration and doesn't infiltrate into the groundwater.

2. Selection of Treatment BMPs

Treatment BMPs have been proposed to retrofit existing pollution-generating impervious surfaces (PGIS) so that only treated runoff is allowed to enter the proposed wetlands. The proposed impervious surfaces are non-PGIS paths and walkways that do not require runoff treatment; the only exception is a single driveway cut on NE 65th Street. On the whole, selection of the treatment BMPs had to account for the lack of topographic relief on the site while permitting gravity-flow connections to existing and proposed downstream conveyances; furthermore, site soils are not suitable for infiltration so BMPs relying on infiltration were not considered. Stormfilter® BMPs (given a General Use Designation by Washington Department of Ecology for "Basic" treatment) were selected to retrofit existing pavement areas that drain to existing storm drain pipes because they fit the space available on the site and the constraints of the existing hydraulic grade line (HGL). Currently the existing parking lot drains untreated runoff directly into the existing wetlands, and the project proposes a filter strip that fits within the limited vertical relief of the site. It is important to note that because these PGIS are existing, there is not an opportunity to raise the elevation of such surfaces to provide the vertical relief needed for some of the standard treatment BMPs.

Details of the BMP selection will be provided in the forthcoming Stormwater Technical Information Report. It is worth reiterating, however, that the existing site has no stormwater treatment for street and parking lot runoff that drains directly to Lake Washington, and that the proposed stormwater improvements reduce the overall amount of PGIS and pre-treat the remaining PGIS areas prior to

draining into the proposed wetlands. It should be noted that neither the City of Seattle nor King County stormwater regulations require Seattle Parks to provide water quality treatment for these areas because they are existing.

3. Treatment of Runoff from Athletic Fields

There are two types of athletic field surfaces proposed. Artificial turf field surfaces are inert and do not trigger water quality treatment because fertilizers and pesticides will never be used on the fields. The proposed natural turf athletic fields will be comprised of grass in/on the top layer of a freely draining sandy soil with an underlying field drainage system that consists of perforated underdrain pipes. The vegetation management scheme for the natural turf fields may include applications of fertilizers. It is not clear from the City and King County drainage manuals what types of field sections alleviate or trigger water quality treatment for water collected in the underdrainage system. Based on the available research, such as the study included in Appendix B of the Preliminary Storm Drainage Report for the project (Rosewater Engineering, 2001), underdrained natural turf systems provide much greater inherent pollutant control capability than fields that drain by surface runoff.

The fields are not expected to yield surface runoff for typical frequent storms because of the highly permeable soils and based on the engineer's observations of other fields of similar design. Because the field materials and sections have been specially selected and designed to promote drainage, MKA expects that the design water quality storm will fully percolate through the proposed field sections, which will filter pollutants before the percolated water is collected in the underdrains, and that surface runoff will be minimal or eliminated altogether.

Seattle Department of Parks and Recreation staff have told the project designers that Seattle Parks does not use pesticides or herbicides for athletic fields, but rather uses slow-release nitrogen and low-phosphate fertilizer, which is expected to minimize the amount of nutrients released from the fields. Nitrates will be removed as flow trickles through the field section, as would occur in an on-site wastewater system that uses a sand filter. Phosphorous will also be removed as water percolates downward through the section. The field will act as a large sand filter, which is an approved BMP for phosphorous and sediment control. MKA understands that water quality sampling will be conducted at the field drain outfalls to verify the pollutant control capability of the fields.

4 and 5. Selection of Specific TESC BMPs

As noted earlier, the current Plans include minimum TESC BMPs to be implemented by the Contractor, and require the Contractor to provide additional controls needed to ensure the site will comply with State water quality standards. This is an industry standard practice. It is not possible or appropriate for the site designers and engineers to prescribe all elements of the TESC plan to the Contractor, particularly those elements that depend on the Contractor's schedule, sequence of operations, and available equipment/crews (i.e. "means and methods"). For example, the timing and phasing of the earthwork that depend on the Contractor's means and methods will ultimately

determine when and where temporary mulch/plastic/seeding is applied. These conditions and requirements, including specific performance criteria, are addressed by MKA through the TESC notes that are incorporated into the current Plans, and are to be included in the Contractor's TESC Plan and/or SWPPP (Stormwater Pollution Prevention Plan).

6. See response to #8, below. Stormwater Pre-treatment

7. Biological Evaluation

The Draft Biological Evaluation (BE), prepared as part of complying with the Endangered Species Act (ESA), is designed to identify and analyze project-related impacts to species listed under the ESA. A determination of effects to listed species is made as a part of the BE document. The project is described to the extent possible within the BE, and the analysis of project-related effects is based on the project description and consequences that may reasonably be expected from project construction and operation.

The temporary erosion and sediment control (TESC) measures identified and described in the BE are sufficient for analyzing the effect of project grading and construction on listed species. The listed species that would potentially be impacted by project-related mobilization of sediment include Puget Sound Chinook and bull trout that may occur in Lake Washington. However, no mobilization of sediment into Lake Washington is anticipated as there is no proposed direct discharge to the Lake, and thus no construction-related effects to listed fish species are anticipated. The TESC measures were identified in the BE to indicate that the project explicitly recognized that these measures were to be implemented to ensure that sediment effects to listed species would not occur. The TESC measures to be implemented will follow the King County surface water management manual best management practices (BMPs) protocol. No adverse effects to listed fish species associated with ongoing project operations and water quality are anticipated either, as currently untreated water discharging into Lake Washington will be treated under proposed project conditions.

8 and 6. Existing Stormwater Pipe and Stormwater Pre-treatment

An existing buried stormwater pipe currently discharges runoff directly into Lake Washington. Under existing conditions, this runoff comes from paved surfaces in and around the former Sand Point Naval Base housing. The contributing area for the runoff totals 7.46 acres, 1.97 acres of which is impervious surface (paved areas and rooftops). The paved area represents a combination of non-arterial roadway and parking for the residential structures, and expected contaminants of concern from the paved areas include sediment, metals such as copper and zinc, and hydrocarbons. The contributing area for this runoff is identified as Entrance Marsh 1C Basin in the Technical Memorandum Stormwater and Hydroperiod Analysis document (MKA, 2006) prepared for the project.

Under proposed conditions, the runoff from this area will be treated using a mechanical filter prior to being discharged into the wetland. Filtration treatment involves the use of the StormFilter® system (zeolite, perlite, granular activated carbon) to filter stormwater running off of the impervious surfaces within the catchment. The StormFilter® system has been accorded a General Use Level Designation for Basic Treatment by the Washington State Department of Ecology, and has been shown to consistently satisfy Ecology's basic stormwater treatment goals, including the removal of total suspended solids (TSS), soluble metals, soluble phosphorus, nitrates, and oil and grease. Water from the daylighted pipe discharging into the project wetlands, therefore, will be sufficiently pre-treated at an acceptable level of quality to be introduced into a wetland system.

9. Water Quality Monitoring Adequacy

As noted previously, the reviewed Monitoring Plan was developed in response to assure that Performance Standards for the Compensatory Mitigation were met and adaptive management actions were identified. The water quality element of the Monitoring Plan for Wetland Compensatory Mitigation was intended to provide information to inform the adaptive management strategies for establishing wetland plants and associated biota within the newly created and enhanced wetlands. The monitoring program was required by a Seattle City Council amendment at the request of the citizens interested in the Park and this project. The water quality monitoring described in that report was not prepared to define stormwater quality and quantity conditions for the project.

The stormwater quality monitoring and management plan for the project was to be developed after the design of the project had exceeded 90%. This ensures that the sampling locations and specific timing of sampling efforts can be established. Furthermore, it is typical for many projects that the stormwater quality monitoring program is specified as a condition of the permit allowing for the use of the completed project design to direct the stormwater monitoring design.

Stormwater monitoring for this project will be conducted in compliance with state and federal guidelines including the 2005 WDOE Stormwater Manual. Sampling will include flow-weighted composite samples throughout the storm event. The frequency of stormwater sampling will be established for several events with an understanding of the need to balance cost and statistical reliability. Storms sampled will include the "first-flush" event as well as the design storm to define a water quality event as described in the WDOE manual (WDOE 2005). Sampling will be conducted using trained professionals and established industry and agency-approved protocols. Where appropriate, trained volunteers, under supervision of paid professionals, may be engaged in monitoring to allow continued hands-on involvement of dedicated citizen volunteers from the area. (See #10). It was not realistic to craft the Stormwater Monitoring Plan for the project in this fore-shortened response time- frame; we fully expect Ecology to condition the permit to require a Stormwater Plan designed to 2005 WDOE Manual Standards and will prepare one for subsequent review and comment.

10. Use of Volunteers for Collecting Monitoring Data

The Monitoring Plan for Wetland Compensatory Mitigation was written specifically to monitor the wetland habitats for success and viability. There is a long-history of ongoing public involvement in hands-on habitat restoration in the Park. The identification of volunteers to collect data, including water quality samples related to habitat restoration, is appropriate and was strongly supported by members of Friends of Magnuson Park and MESA, Seattle Parks, and King County (Seattle Parks received a restoration grant from King County that specified training volunteers for restoration installation and monitoring). As noted in the comments from Mr. Abbasi at Ecology, trained volunteers, under the supervision of professionals, are an appropriate means to collect regular stormwater samples. Specific event-driven sampling would be conducted by paid professionals to assure appropriate methods and timing (e.g., sample collection required in the middle-of-the-night storm events). (See #9).

11. Range of Parameters for Analysis

The stormwater monitoring plan will include analysis of parameters that are associated with runoff from the specific land uses draining to and within the project area that may have the potential to impact aquatic life. These parameters include those outlined within the Monitoring Plan for Wetland Compensatory Mitigation (total phosphorus levels; total nitrogen compound levels; dissolved oxygen; total suspended solids; fecal coliform bacterial counts; water temperature; and water pH) as well as the dissolved fraction of heavy metals including copper and zinc, total dissolved solids, and total petroleum hydrocarbons. As stated in the Monitoring Plan for Wetland Compensatory Mitigation, organopollutants (e.g. herbicides and pesticides) will not be used on the fields per Seattle Parks BMP's for Turf Management and are therefore not included in the list of monitoring parameters.

"According to the 2005 BMP's for Turf Management, the Seattle Department of Parks and Recreation does not apply fertilizer in the immediate vicinity of wetlands, or within 50 feet of shorelines. 2005 BMP's also include Integrated Pest Management protocols which specify that turf pests (including weeds, insects and diseases) in athletic fields are generally controlled through good turf cultural practices rather than by the use of herbicides and pesticides.."

We hope that this letter addresses the concerns raised in Dr. Horner's memo, and specifically clarifies that current plans (at 96% completion) are far more developed than the early stage JARPA set that was reviewed. Seattle Parks understands the requirement for a stormwater monitoring protocol based on the Ecology 2005 standards and was fully expecting to have such a requirement applied as a condition of the 401. The Monitoring Plan provided in the JARPA was crafted for monitoring the wetland habitat restoration, it was never intended to meet the requirements of the projects stormwater monitoring plan.

Ms. Cynthia S. Walcker

US Army Corps of Engineers Reference #20060052

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January 11, 2007

Please feel free to call me, any of our staff, or Brian Taylor at Magnusson Klemencic if you or other Ecology staff need further clarification or specificity at this point. We will be sending you and Ann Uhrich at the Corps, a copy of the TIR by January 29; in addition we will post it on Seattle Park's Warren G. Magnuson Park web page for ease of access to others.

Sincerely,

Sincerely,

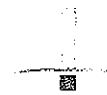
Otak, Incorporated

Kevin O'Brien for Dyanne Sheldon

Dyanne Sheldon, Manager
Natural Resources Section

Cc: Ann Uhrich, Corps of Engineers

DS:dn



**MAGNUSSON
KLEMENCIC**
ASSOCIATES

January 10, 2007

Mr. Guy Michaelsen
The Berger Partnership
1721 Eighth Avenue North
Seattle, Washington 98109

Subject: **Magnuson Park
Phase II Improvements
Seattle, Washington**

Re: Clarification of Storm Drainage and Wetland Design for Permit Review
U.S. Army Corps of Engineers Public Notice 200600052

Dear Guy:

Magnusson Klemencic Associates (MKA) understands that there are some preliminary comments and questions about the storm drainage and wetland design shown in the Permit Submittal for the Magnuson Park Phase II Improvements. This letter is intended to clarify the previously submitted documents by providing additional relevant background information and informing the reader of design developments made during the preparation of the 96% Plans, since the Permit Submittal was prepared approximately one year ago.

PROJECT STORM DRAINAGE AND WETLAND DESIGN

As it is required to comply with City of Seattle drainage code requirements, this project's drainage design conforms with the most recent King County and Washington Department of Ecology (Ecology) stormwater manuals to the extent practicable. Stormwater detention is not required for the project because the site is considered to "direct discharge" to Lake Washington; nonetheless, proposed swales and wetland pools will act to attenuate peak runoff rates from the site.

The Magnuson Park site is a historic military installation that was redeveloped into a city park, including roads and parking lots, and it has no engineered stormwater management facilities to treat or control runoff. As such, the proposed site improvements are expected to reduce stormwater pollution from the site. A large amount of the existing pollutant-generating impervious surfaces (PGIS) that drain untreated runoff to existing surface water will be removed from the site as part of this project; "basic" stormwater treatment will be provided for new PGIS and existing PGIS that drain to the proposed wetlands. Overall, there will be a substantial net reduction in the amount of untreated runoff released from the site in comparison to the existing conditions.

To assist reviewers in understanding the proposed stormwater management design for the project, MKA is preparing a Stormwater Technical Information Report for the Magnuson Park Phase II Improvements in the format typically used for projects that are subject to King County stormwater regulations. This report will present background information about the site's existing use (and lack) of stormwater controls, discuss stormwater requirements and design criteria, describe the watershed and project subbasins, and document the selection/design of the specific stormwater management practices appropriate for the site.

Structural & Civil Engineers
1301 Fifth Avenue, Suite 3200 Seattle, Washington 98101-2699
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The intent of the Stormwater and Wetland Hydroperiod Analysis report/memorandum (MKA, 2006) was to confirm the viability of the wetlands' hydrologic design by applying a long-term simulation. A detailed water balance model was prepared that accounted for rainfall, evapotranspiration, off-site contributions of water, flow between wetland pool areas, and release to Lake Washington. This hydrologic simulation yielded continuous daily estimates of wetland water levels over a 25-year period and was used to inform the landscape plan by matching wetland species and communities to the anticipated hydrologic regime. The wetland design does not rely on groundwater interactions because the existing site soils general consist of, or are underlain by, soil that was compacted and disturbed during the past use of the site as a Naval Air Station; the available geotechnical information states that the existing site soils have low hydraulic conductivity/permeability.

PROJECT CONSTRUCTION

Construction-phase stormwater controls, including Temporary Sedimentation and Erosion Control (TESC) and Spill Control practices, are proposed for this project. These controls conform with City of Seattle requirements and the most recent King County and Ecology stormwater manuals to the extent practicable. This project uses a typical approach to permitting and designing the construction-phase stormwater controls: for the Permit Submittal and Construction Drawings, the minimal controls deemed necessary by the Engineer to control erosion and sedimentation are included in the drawings and specifications, with specific detailed directions and performance criteria (incorporated in the "notes" section of the plans) for the Contractor to modify the plan to comply with the Washington State Water Quality requirements by refining and adding Best Management Practices (BMPs) that take into account specific Contractor means, methods, and timing. The Contractor's TESC Plan will be incorporated into a Stormwater Pollution Prevention Plan (SWPPP) prior to starting construction. This approach is desirable because it provides for meeting all the TESC-related regulations without requiring the designers to incur the liability of prescribing means and methods to the Contractor.

RESPONSE TO SPECIFIC COMMENTS

1. USE OF SWALES TO CONVEY RUNOFF

Because this site is so flat and has only a very small amount of topographic relief for engineered drainage systems, it is imperative to keep stormwater flows at or near ground surface and to minimize the use of piped storm drainage systems. Vegetated swales are the preferred approach to conveying runoff for this site because they provide some water quality treatment, maintain the hydraulic grade line of the storm drainage conveyance paths at an adequate elevation to direct runoff to the desired locations (e.g., wetland cells), allow water to be expressed on the ground surface where it enhances wildlife habitat, and are less expensive and easier to maintain than buried piped conveyances.

2. SELECTION OF TREATMENT BMPs

Treatment BMPs have been proposed to *retrofit* existing PGIS so that only treated runoff is allowed to enter the proposed wetlands. The proposed impervious surfaces are non-PGIS paths and walkways that do not require runoff treatment; the only exception is a single driveway cut on Northeast 65th Street.

On the whole, selection of the treatment BMPs had to account for the lack of topographic relief on the site while permitting gravity-flow connections to existing and proposed downstream conveyances. Furthermore, the site soils are not suitable for infiltration, so BMPs relying on infiltration were not considered. Stormfilter™ BMPs (which are given a general use designation by Ecology for "Basic" treatment) were selected to retrofit existing pavement areas that drain to existing storm drain pipes because they fit the space available on the site and the constraints of the existing hydraulic grade line (HGL). Where the existing parking lot drains untreated runoff directly into the existing wetlands, a filter strip is proposed that fits within the limited vertical relief of the site. It is important to note that because these PGIS are existing elements, there is not an opportunity to raise the elevation of such surfaces to provide the vertical relief needed for some of the standard treatment BMPs.

Details of the BMP selection will be provided in the forthcoming Stormwater Technical Information Report. It is worth reiterating, however, that the existing site has no stormwater treatment for street and parking lot runoff, that the proposed improvements reduce the overall amount of PGIS and treat the remaining PGIS areas that drain into the proposed wetlands, and that neither the City of Seattle or King County stormwater regulations require the owner of the project to provide water quality treatment for these areas because they are existing.

3. TREATMENT OF RUNOFF FROM ATHLETIC FIELDS

There are two types of athletic field surfaces. Artificial turf field surfaces are inert and do not trigger water quality treatment because fertilizers and pesticides will never be used on these fields. The proposed natural turf athletic fields will be comprised of grass in/on the top layer of a freely draining sandy soil with an underlying field drainage system that consists of perforated underdrain pipes. The vegetation management scheme for the natural turf fields may include applications fertilizers. It is not clear from the City and King County drainage manuals exactly what types of field sections alleviate or trigger water quality treatment for water collected in the underdrainage system. Based on the available research, such as the study included in Appendix B of the Preliminary Storm Drainage Report for the project (Rosewater Engineering, 2001), underdrained natural turf systems provide much greater inherent pollutant control capability than fields that drain by surface runoff.

The fields are not expected to yield surface runoff for typical frequent storms because of the highly permeable soils and based on the engineer's observations of other fields of similar design. Because the field materials and sections have been specially selected and designed to promote drainage, MKA expects that the design water quality storm will fully percolate through the proposed field sections, which will filter pollutants before the percolated water is collected in the underdrains, and that surface runoff will be minimal or eliminated altogether.

Seattle Parks staff have told the project designers that Seattle Parks does not use pesticides for athletic fields but rather uses slow-release nitrogen and low-phosphate fertilizer, which is expected to minimize the amount of nutrients released from the fields. Nitrates will be removed as flow trickles through the field section, as would occur in an on-site wastewater system that uses a sand filter. Phosphorous will also be removed as water percolates downward through the section. The field will act as a large sand filter, which is an approved BMP for phosphorous and sediment control. MKA understands that water quality sampling will be conducted at the field drain outfalls to verify the pollutant control capability of the fields.

Mr. Guy Michaelsen
January 10, 2007
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**MAGNUSSON
KLEMENCIC**
ASSOCIATES

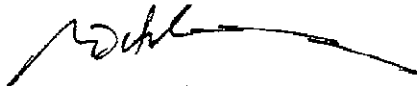
4. AND 5. SELECTION OF SPECIFIC TESC BMPs

As noted earlier, the Plans include minimum TESC BMPs to be implemented by the Contractor and require the Contractor to provide additional controls needed to ensure that the site will comply with State water quality standards. It is not possible or appropriate for the site designers and engineers to prescribe all elements of the TESC Plan to the Contractor, particularly those elements that depend on the Contractor's schedule, sequence of operations, and available equipment/crews (i.e., "means and methods"). For example, the timing and phasing of the earthwork that depends on the Contractor's means and methods will ultimately determine when and where temporary mulch/plastic/seeding is applied. These conditions and requirements, including specific performance criteria, are addressed by MKA through the TESC notes that are incorporated into the Plans, which are to be included in the Contractor's TESC Plan and/or SWPPP.

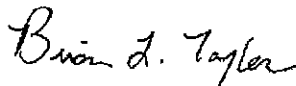
In conclusion, MKA whole-heartedly believes that this project exceeds the City of Seattle's regulatory stormwater requirements, greatly reduces stormwater pollution released from Magnuson Park to Lake Washington from existing conditions, and will yield viable wetlands. Please do not hesitate to call us if you have any questions.

Sincerely,

Magnusson Klemencic Associates, Inc.



Steven D. Haluschak, P.E.
shaluschak@mka.com



Brian L. Taylor, P.E.
btaylor@mka.com

BLT/dah

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